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IS 11172-2 (1985): Recommendations for Tool Shanks for Numerically Controlled Machine Tools (tool stationary type), Part 2: Prismatic Shank [PGD 32: Cutting tools]

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*Indian Standard*

**RECOMMENDATIONS FOR  
TOOL SHANKS FOR NUMERICALLY CONTROLLED  
MACHINE TOOLS ( TOOL STATIONARY TYPE )**

**PART 2 PRISMATIC SHANK**

**1. Scope** — Covers dimensions and requirements of tool shanks of adaptors with prismatic shank required for mounting on numerically controlled ( NC ) machine tools ( tool stationary type ).

**1.1 General assembly and types of tool adaptors with prismatic shank ( stationary type ) for NC machine tools are given in Appendix A.**

**2. Dimensions and Tolerances** — Shall be according to Table 1.

**3. Material** — Alloy steel having a tensile strength not less than 800 MPa in the core after case-hardening.

**4. Hardness** — The hardness shall be 590 to 670 HV after case-hardening in the areas specified by long chain-thick lines in the figure ( see Tables 1 and 2 ).

**5. General Requirements**

**5.1** Tolerance on dimensions without specified tolerances shall be of class 'medium' according to IS : 2102 ( Part 1 )-1980 'General tolerances for dimensions and form and position : Part 1 General tolerances for linear and angular dimensions ( second revision )'.

**5.2** The shanks shall be manufactured in one piece and shall be free from cracks, burs and other manufacturing defects.

**5.3** Mounting details for these shanks are given in Table 2.

**6. Protective Coating and Packing** — Each shank shall be covered with a suitable rust proofing material and wrapped in a non-absorbent paper.

Adopted 25 February 1985

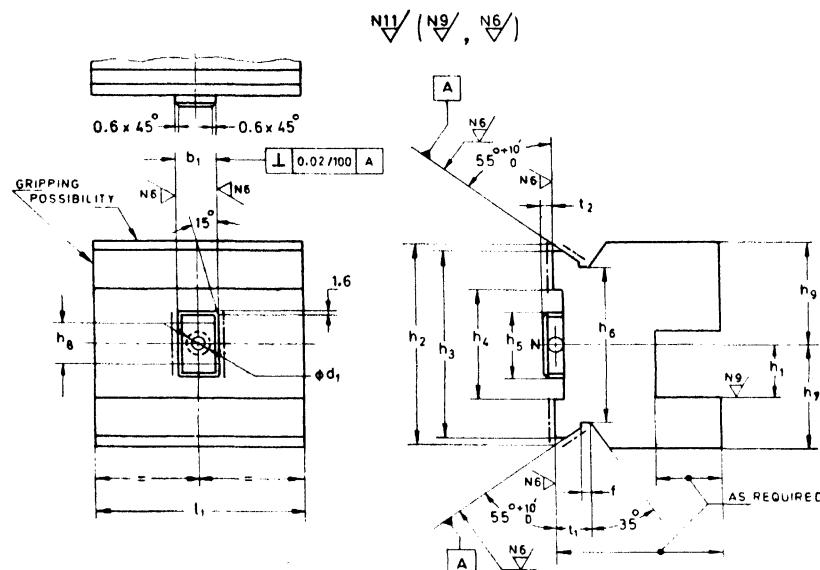
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TABLE 1 DIMENSIONS OF TOOL SHANKS, PRISMATIC SHANK

(Clause 2)

All dimensions in millimetres.



Nominal Size $h_1$	$b_1$ $h_5$	$d_1$ Max	$f$	$h_3$		$h_4$	$h_5$ Max	$h_6$ Max	$h_7$ Max	$h_8$ Max	$h_9$ Max	$t_1$ Max	$t_2$ Min	$t_3$ -0.2	
				Size	Tolerance										
16	16	10	3	56	0 -0.1	52	32	20	39	40	16	40	63	13	5
20	20	12	3	72	0 -0.1	68	42	20	53	42.5	20	42.5	85	15	6
25	25	15	5	90	0 -0.2	85	50	25	71	50	25	50	100	17	6
32	25	15	5	115	0 -0.2	110	65	32	95	62.5	25	62.5	125	19	6
40	25	15	7	140	0 -0.2	135	80	40	115	80	25	80	160	23	6

\*Opening for the coolant exit may be produced even later.

†Preferred dimension for ensuring interchangeability.

‡Sealing surface for coolant connection to be soft.

§For adaptor required for autochange; otherwise Max  $h_4$ .

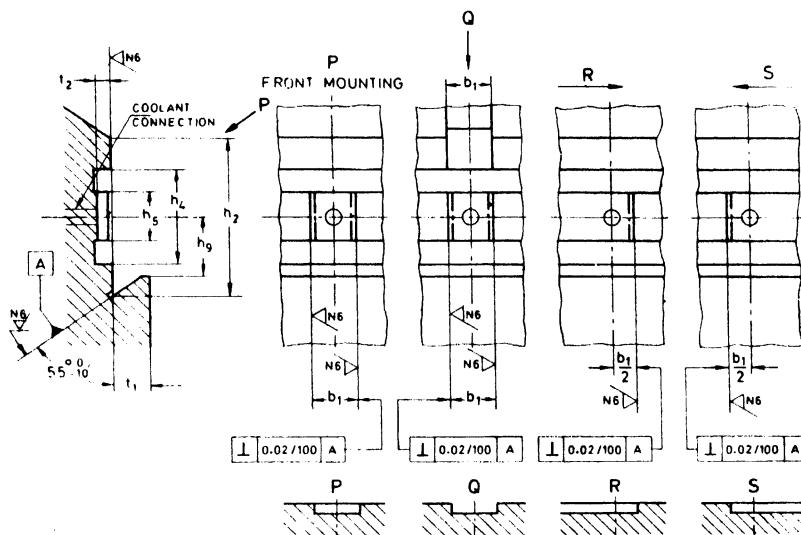
N — Tool reference point.

Case hardened portion shown as long chain thickline.

TABLE 2 MOUNTING DETAILS FOR PRISMATIC TOOL SHANKS

(Clause 5.3)

All dimensions in millimetres.



P, Q, R and S are design forms for introducing the tool shanks in the direction of arrow.

Nominal Size $h_1$ (see Note 1)	$b_1$	$h_3$	$h_4$	$h_5$ Max	$h_9$	$t_1$ Max	$t_1$
16	16	56	32	20	21	12	5.5
20	20	72	42	20	28	14	6.5
25	25	90	50	25	37	16	6.5
32	25	115	65	32	49	18	6.5
40	25	140	80	40	59	22	6.5

Note 1 — Nominal size  $h_1$  is same as in Table 1.

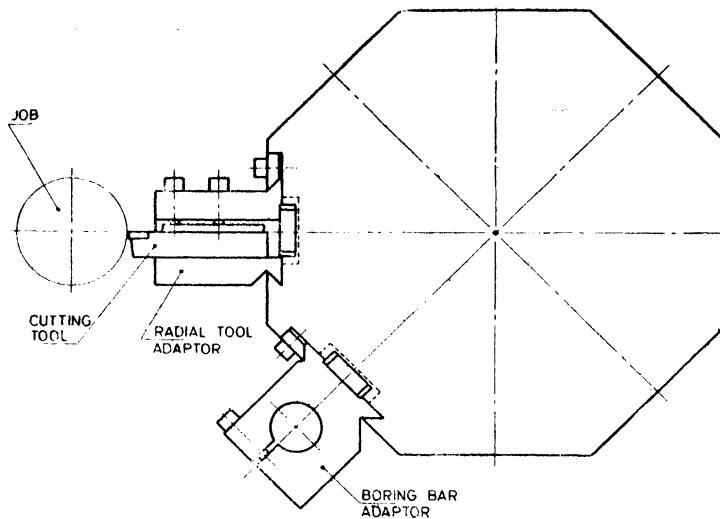
Note 2 — Case hardened portion shown as long chain thick line.

Note 3 — Tolerance for  $b_1$  for P and Q design forms shall be H<sub>4</sub>.

APPENDIX A

( Clause 1.1 )

GENERAL ASSEMBLY AND TYPES OF TOOL ADAPTORS WITH PRISMATIC SHANKS (TOOL STATIONARY TYPE) FOR NC MACHINE TOOLS



EXPLANATORY NOTE

In the preparation of this standard considerable assistance has been drawn from VDI 3425 (Part 3)-1972 'NC machine tools, standard tool systems for lathes, prismatic shank, published by Association of German Engineers, VDI.